THE DANGERS OF GASTROSCOPY

The dangers of gastroscopy are all related to the passage of the instrument through the œsophagus. At the present time there are so few men doing gastroscopy that the beginner has difficulty in receiving adequate instruction. In our series there have been two accidents, both in patients who were straining a great deal during the passage of the instrument. One patient developed a spontaneous pneumothorax from which he made a complete and unaided recovery. The second was a markedly debilitated man suffering from obstructive jaundice and anæmia. There was inconclusive radiographic evidence suggesting gastric malignancy. The patient refused to cooperate and as there was violent straining the examination was discontinued, while the instrument was still in the œsophagus. That afternoon he experienced a sharp epigastric and left chest pain, which was due to a spontaneous pneumothorax. He later developed a pyopneumothorax which proved fatal in spite of drainage. Autopsy revealed no evidence of injury to the œsophagus and no evidence of mediastinitis.

CONCLUSION

As Chevalier Jackson has said, "Gastroscopy is an addition to and not a substitute for any other method of examination of the stomach". With its aid the gastro-enterologist will be able to distinguish minor but definite changes from the normal, which could not possibly be demonstrated in any other way. One of its greatest contributions has been the placing of the diagnosis of gastritis on a thoroughly scientific basis. For twenty years the diagnosis of chronic gastritis has hardly been accepted as a definite clinical entity, while inflammation of other mucous membranes has been recognized and treated. Accuracy in diagnosis is always increased by a direct visualization of the lesion. In the future it will not be a question of history, test meal, x-ray, and exploratory laparotomy in doubtful gastric cases, but, rather, history, test meal, x-ray and gastroscopy. The grosser defects produced by hypertrophic gastritis, peptic ulcer with a crater, and moderately advanced malignant disease can be readily detected roentgenologically. Certainly the superiority of the gastroscope in demonstrating the finer but often significant pathological changes can hardly be questioned.

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ECHINOCOCCUS ALVEOLARIS*

(WITH THE REPORT OF A CASE)

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ECHINOCOCCUS disease, as everyone knows, is the cystic stage of the tapeworm *Tænia echinococcus*, which passes its adult life in the intestine of the dog. The cystic stage may take one of two forms, the one common, the other extremely rare in many countries infested by the parasite. Human beings become infected by eating unboiled vegetables that have been contaminated by the excreta of dogs that harbour the adult worm.

Echinococcus hydatidiformis, the more common form of the disease, is one in which there is the formation of hydatid cysts. In the intestine the ingested embryo develops into a larva that penetrates the wall of the gut, enters the portal circulation, and is carried to the liver and other organs. The larvæ lodge in the liver, etc., and form cysts which may become as large as a man's head. These cysts consist of a white outer layer and an inner granular or germinal layer. From this inner layer scolices of new worms or daughter endocysts arise by an internal budding process. The cysts are filled with a thin milky fluid.

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Echinococcus alveolaris is the other form of the disease, and differs from the above in that huge cysts are not formed, but those which are produced vary in size from a pin-point up to small hen's eggs. They do not contain daughter cysts and scolices are never present. These cysts are very numerous and arise by an external budding process.

Although the hydatid form of the disease is comparatively common in Canada, Iceland, and Australia, no cases of the alveolar form have been reported in the first two countries and only one case from Australia (Dew,[1] 1931). Of 235 cases of the disease which had been reported up until a few years ago 214 were from central and eastern Europe; the Tyrol and Alps, 30; Switzerland, 32; Bavaria and Wurtenburg, 82; Russia and Siberia, 70. Several cases have been reported from France. In the countries where the alveolar form of the disease is so comparatively common the hydatid form is just slightly more frequent.

ETIOLOGY

There are two main theories regarding the etiology of *Echinococcus hydatidiformis* and *Echinococcus alveolaris*. Some workers believe that these are two different diseases, each caused by a specific type of echinococcus. The other school favours the view that they are different tissue reactions caused by the same parasite. The latter view seems to be the most logical, especially after the work of Dévé[2] and his analysis of three reported cases which show the presence of both types of lesions, and the blending of one type into the other. Dew states "that all echinococcus lesions found in man and animals are essentially the same, and that the pleomorphism they exhibit is due to the occurrence of parasitic variations".

PATHOLOGY

The liver is the most common site of the alveolar form. The lesion consists of a firm tumour made up of many small alveoli or cyst-like spaces which are filled with a mucoid material and surrounded by a fairly dense fibrous stroma. These cysts are rarely larger than 5 to 10 mm. in diameter, and because of their mucoid content were at one time considered as a colloid cancer. In 1855 Virchow recognized their true nature.

The inner granular or germinal layer of these cysts is generally not intact. It forms small buds which extend outside the cyst and follow along tissue planes to form new cysts. The outer layer is a laminated, soft, amyloid-like material which may have a crumpled appearance, so that most cysts are irregular and oval rather than round in outline. Scolex formation does not occur, and reproductive elements are rarely found in the cysts.

Surrounding the budding processes there is an inflammatory reaction like that seen around a foreign body. This reaction is due to a toxin which is liberated. Epithelioid cells, giant cells, and lymphocytes may be numerous, so as closely to resemble the lesions of tuberculosis. The neighbouring blood vessels show an endarteritis, but some may be invaded by the parasitic growth, and metastases may be found in the lungs, spleen, brain, kidneys, etc. The powerful toxin which is liberated by its action on the blood vessels and on the tissues locally frequently causes necrosis, with the formation of a large ragged abscess filled with cholesterol, necrotic material and calcareous matter.

CASE REPORT

The patient was a fisherman, 54 years of age, who came to Canada from Iceland when seven years old, and had resided here ever since. In April, 1928, he consulted Dr. B. J. Brandson because of a large mass in his left hypochondrium which had appeared during the last year, and was accompanied by loss of health and loss of strength. He had always enjoyed good health previously. The mass was globular, smooth-surfaced, and filled the left hypochondrium. A diagnosis of hydatid cyst was made before operation. At operation a large cyst was found replacing practically the whole left lobe of the liver. It was sewn to the anterior abdominal wall, opened, and drained of numerous broken-down daughter cysts and jelly-like material. The cavity was packed with gauze.

The man made a good recovery and remained fairly well for three years, but returned in May, 1935, because of severe upper abdominal pain and a discharging sinus which had been present since his operation in 1928. He had continued to lose weight and for the previous two years had been unable to work. The sinus was excised in May, 1935, but further operative measures were deemed unwise because of hæmorrhage and the poor condition of the patient. Convalescence was satisfactory for about ten days, but then he developed headache, dizziness, dimness of vision and rigidity of the neck. Lumbar puncture revealed a pressure of 18 mm. of mercury, increased globulin, 140 cells per c.mm. (75 per cent polymorphonuclears), and a mid-zone mastic curve on three occasions. The Wassermann reaction was negative. He continued to go downhill and died on July 15, 1935.

Autopsy. — (Only positive findings will be mentioned).

The body was that of a very emaciated male, 54 years of age. The liver weighed 2,125 g. The left lobe was almost completely destroyed and replaced by an old thick-walled abscess containing foul smelling, thick

purulent material, which discharged on to the anterior abdominal wall. Outside this cavity, and extending medially, many small cysts were seen. Numerous cysts were also seen forming large masses in the omentum. They were also present in the walls of the excised sinus. The right lobe of the liver was uninvolved, but was soft and flabby and yellow in colour. The lesions consisted, microscopically, of a central mass of mucoid material surrounded by a fibrous hyaline substance. Many epithelioid and giant cells were present giving a picture similar to that of tuberculosis (Figs. 1 and 2). The

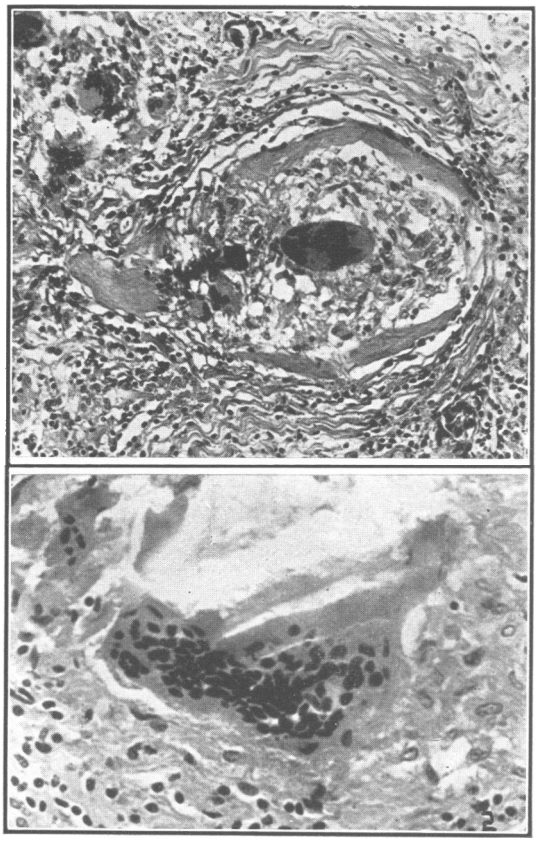

Fig. 1.—Echinococcus alveolaris showing a lesion resembling a tubercle. x 175. **Fig. 2.**—Large multinucleated giant cell. x 325.

N.B.—These magnification numbers are only comparative, as the figures are reduced slightly.

larger cysts were lined by a wavy hyaline material which stained pink with eosin. Within this zone could be seen small fragments of the germinal layer. These two layers were also recognizable in the lesions of microscopic size.

There was congestion of the cerebral vessels, but no lesions in the brain could be found. There were numerous lymphocytes and plasma cells about the vessels in the subarachnoid space.

DISCUSSION

Hydatid disease is comparatively common in Canada, and particularly so in Manitoba on account of the large number of Icelandic emigrants in this province. It is certainly remarkable that not a single case of the alveolar form of the disease has been previously reported in this country, especially if it is granted that the alveolar and hydatid forms are merely different manifestations of the same parasite. The complete absence of the alveolar form in Canada (if we trust to the literature) can be explained in two ways. (1) Cases do occur, but have not been recognized and reported. (2) The assumption that the two forms are different manifestations of the same parasite is erroneous. It is interesting to note that the patient had been absent from Iceland for thirty-six years before the disease showed itself.

SUMMARY

The first-reported case in Canada of *Echinococcus alveolaris*.

We wish to thank Dr. B. J. Brandson whose patient this was for his kind permission to publish this case.

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DERMATITIS FROM DYED AND OTHERWISE TREATED CITRUS FRUITS: REPORT OF TWO CASES.—The practice of colouring citrus fruits by means of dyestuffs, aniline and other substances to give a fully ripened appearance has come into vogue only during the last two to two and one-half years. Traub, Gordon and Van Dyke saw two patients with a dermatitis from handling such treated and dyed fruit. In both instances the dermatitis was caused by the chemically treated or dyed fruit, their patch tests in both patients indicating yellow O B dye as the prime offender. Evidently the dye and chemicals used did not penetrate even to the inside of the peel, as patch tests with the inner surface of the rind gave negative results. Patch tests with the meat of the fruit also were negative. Patch tests with dyed orange skin were repeatedly found to be positive. Patch tests with known undyed and untreated skins (Florida oranges) were negative. In case 1, patch tests with dyed orange peel produced actual blistering of the skin and a severe focal and general reaction. The dyes used on citrus fruits may definitely irritate some skins. These dyes are not general irritants, because the majority of individuals do not react to them. A circumstance of case 1 for which the authors are unable to account on the basis of information supplied them and despite their many repeated tests is the positive reaction to undyed oranges from California.—*J. Am. M. Ass.*, 1937, **108:** 872.